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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/705,792 | 11/06/2000 | Toshiaki Kashihara | Q61526 | 6031 |

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[REDACTED] EXAMINER

TAMAI, KARL I

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2834 | |

DATE MAILED: 01/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|---------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/705,792 | KASHIHARA ET AL. |
| | Examiner Tamai IE Karl | Art Unit 2834 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-19 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) Interview Summary (PTO-413) Paper No(s) _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

3. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

4. The abstract of the disclosure is objected to because the abstract is not a concise statement of the invention. The abstract must be less than 250 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 5, 6, 9-11, 13, 15-17, and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Kawano (JP 05-176539) and Gautier (US 5,982,062). Kawano teaches an AC generator having a casing, rotor, stator, and rectifier. The rectifier with a diode package 5a, 5b between the cooling plates 1, 4. The diode package having four plus side diodes 5a, four minus side diodes, and an AC input terminal 3. The diodes having bases 50 inserted in the cooling plates and AC terminal. The diode package having the diodes embedded in an insulating resin 8 with the AC terminal 3 extending from the resin to form a one piece construction. The AC terminal having a bent, joint structure for connecting the stator coil at 6, 7. Figure 23 shows the diodes are positioned in the outer diameter portion of the fan. Kawano teaches every aspect of the invention except the metal base plates for the diodes with cooling fins. Gautier teaches copper base plates for the diodes to facilitate assembly of the rectifier with cooling fins 18. Gautier teaches the bases are knurled and pressed into the cooling plates. Gautier

teaches the face of the base connected to the diode being larger than the anode/cathode of the diode. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the generator of Kawano with the diodes soldered to copper bases which are press fit into heat plates to facilitate manufacturing of the alternator.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawano (JP 05-176539) and Gautier (US 5,982,062), in further view of Einthoven (US 5,950,068). Kawano and Gautier teach every aspect of the invention except the mesa diffusion element made using n-silicon and the dimension of the base, cathode, and anode. Einthoven teaches a n-silicon mesa diffusion diode for a rectifier. The rectifier having a truncated shape which inherently provides a smaller cathode than anode. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the generator of Kawano and Gautier with the diodes of Einthoven to provide an rectifier with improved breakdown voltage.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawano (JP 05-176539) and Gautier (US 5,982,062), in further view of Ragaly (US 4,303,935). Kawano and Gautier teach every aspect of the invention except the face of the AC terminal and base plates is the same or larger than the face of the diodes. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the generator of Kawano and Gautier with the face of the AC terminal and

base plates is the same or larger than the face of the diodes secure the diodes to the terminal/bases by soldering, as taught by Ragaly.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawano (JP 05-176539) and Gautier (US 5,982,062), in further view of Mori et al.(Mori) (US 5,8728,564). Kawano and Gautier teach every aspect of the invention except the junction between the base/cooling plate larger than the junction between the base/diode. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the generator of Kawano and Gautier with the junction between the base/cooling plate larger than the junction between the base/diode, as in Mori, to provide good seating between the base and the cooling plate.

10. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawano (JP 05-176539) and Gautier (US 5,982,062), in further view of Abadia et al.(Abadia)(US 5,883,450). Kawano and Gautier teach every aspect of the invention except the bases are soldered into the cooling plates. Abadia teaches the equivalence of the bases of the diodes being press fit, welded, or soldered to the cooling plates. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the generator of Kawano and Gautier with the bases solder to the cooling plates to provide a more secure mechanical connection, and because it choosing between known equivalents requires only routine skill in the art, as shown by Abadia soldering and press fitting are equivalent connections in the rectifier art.

11. Claims 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawano (JP 05-176539) and Gautier (US 5,982,062), in further view of Deverall et al. (Deverall) (US 5,451,823). Kawano and Gautier teach every aspect of the invention except the cooling plates extending radially inward with a large number of cooling holes. Deverall teaches (figure 10) the cooling plates extending inward with a large number of cooling holes (410, 410, and 412). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the generator of Kawano and Gautier with the holes in the cooling plates because Deverall teaches aligned ventilators to cool the plates 200 and 500.

12. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawano (JP 05-176539) and Gautier (US 5,982,062), in further view of Yoshinaga et al. (Yoshinaga) (US 5,886,403). Kawano and Gautier teach every aspect of the invention except the resin having inorganic calcined product. Yoshinaga teaches that the resin includes inorganic silica or alumina but not necessarily Al_2O_3 or SiO_2 (calcined). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the generator of Kawano and Gautier with the resin having inorganic particles to provide suitable internal pressure as taught by Yoshinaga, and with the particle being Al_2O_3 or SiO_2 because they are known insulators in the rectifier art and Yoshinaga suggests the particles are alumina or silica.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (703) 305-7066.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nestor Ramirez, can be reached at (703)308-1371. The facsimile number for the Group is (703)305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Karl I Tamai
PRIMARY PATENT EXAMINER
January 11, 2002

KARL TAMAI
PRIMARY EXAMINER
